

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A system for cutting a multi-walled material, comprising:
a frame;
a worktable supported on the frame, the worktable defining an opening;
a pair of wheels rotatably carried by the frame;
a bandsaw blade trained over the wheels so that rotation of the wheels rotates the band saw blade across the worktable, the bandsaw blade defining a cutting edge and a non-cutting edge, and first and second side surfaces; and
a first blade tensioning device including a base movably supported by the frame and a rotational bearing rotatably mounted on the base, the rotational bearing defining an annular bearing surface, wherein the rotational bearing is adjustably positioned to be in continuous rotational contact with the first or second side surface of the blade and to exert a continuous biasing force against the first or second side surface of the blade to offset the path of the blade a selected distance.
2. The system of Claim 1, wherein the base selectively rotates with respect to the frame for contacting the bearing surface of the rotational bearing against the blade.
3. The system of Claim 1, wherein the first tensioning device further includes a thrust bearing, the thrust bearing being positioned a selected distance from the non-cutting edge of the blade.
4. The system of Claim 3, wherein the thrust bearing is coupled to the base.
5. The system of Claim 1, further comprising a second tensioning device mounted on the side of the worktable opposite the first tensioning device.
6. The system of claim 1, wherein the cutting edge of the bandsaw is serrated to form a plurality of teeth.
7. The system of Claim 1, wherein the cutting edge of the bandsaw blade defines a first section of unset teeth and a first section of set teeth, the first section of set teeth including at least one right set tooth and one left set tooth.

8. The system of Claim 7, wherein the first sections of unset teeth and set teeth continuously alternate around the bandsaw blade cutting edge.

9. The system of Claim 7, wherein the right set tooth or left set tooth includes an intermediate portion extending in a slanting manner to form an acute angle between a central axis of the intermediate portion and a central axis of the blade, and a distal tip portion extending from the intermediate portion in a slanting manner toward the central axis of the blade, the distal tip portion forming an acute angle between the central axis of the intermediate portion and a central axis of the distal tip portion.

10. The system of Claim 7, wherein the set teeth and the unset teeth define tips, the lateral distance formed between the tip of one of the unset teeth and the tip of one of the set teeth is between 0.0180 and 0.0375 inches.

11. The system of Claim 7, wherein the longitudinal distance of the first section of unset teeth is between approximately 4 and 20 inches.

12. A system for cutting a multi-walled material, comprising:
a frame;
a worktable supported on the frame, the worktable defining an opening;
a pair of wheels rotatably carried by the frame; and
a bandsaw blade trained over the wheels so that rotation of the wheels rotates the band saw blade through the opening, the bandsaw blade defining a cutting edge and a non-cutting edge, and first and second side surfaces, wherein the cutting edge defines alternating first and second sections of teeth, the first sections of teeth being set and the second sections of teeth being unset.

13. The system of Claim 12, wherein the first section of set teeth includes at least one right set tooth and at least one left set tooth.

14. The system of Claim 12, further comprising a first blade tensioning device including a base movably supported by the frame, and a rotational bearing rotatably mounted on the base, the rotational bearing defining an annular bearing surface, wherein the roller bearing is adjustably positioned to be in continuous rotational contact with the

first or second side surface of the blade and to exert a continuous biasing force against the first or second side surface of the blade.

15. A method of providing a cutting system for cutting a multi-walled material, comprising:

obtaining a bandsaw including a frame, a worktable supported on the frame and defining an opening, and a pair of wheels rotatably carried by the frame;

training a bandsaw blade over the wheels so that rotation of the wheels rotates the band saw blade through the opening, the bandsaw blade defining a cutting edge and a non-cutting edge, and first and second side surfaces; and

imparting a biasing force against the bandsaw blade in a direction orthogonal to the cutting edge.

16. The method of Claim 15, further including
operating the bandsaw for cutting the multi-walled material.

17. The method of Claim 15, wherein imparting a tensioning force against the blade forms an offset distance between the biased blade position and a position of the blade absent the biasing force.

18. The method of Claim 17, wherein the offset distance is between 0.25-1.00 inches.

19. The method of Claim 15, wherein the cutting edge defines a first section of unset teeth and a first section of set teeth, the first section of set teeth including at least one right set tooth and at least one left set tooth.

20. The method of Claim 19, wherein the first sections of unset teeth and set teeth continuously alternate around the bandsaw blade cutting edge.

21. The method of Claim 19, wherein the right set tooth or left set tooth includes an intermediate portion extending in a slanting manner to form an acute angle between a central axis of the intermediate portion and a central axis of the blade, and a distal tip portion extending from the intermediate portion in a slanting manner toward the

central axis of the blade, the distal tip portion forming an acute angle between the central axis of the intermediate portion and a central axis of the distal tip portion.

22. A method for cutting a multi-walled material, comprising:

installing a bandsaw blade on a bandsaw including a frame, a worktable supported on the frame, and a pair of wheels rotatably carried by the frame, the bandsaw blade defining a cutting edge and a non-cutting edge, and first and second side surfaces, wherein the cutting edge defines alternating first and second sections of teeth, the first sections of teeth being set and the second sections of teeth being unset; and

operating the bandsaw for cutting the multi-walled material.

23. The method of Claim 22, wherein the sections of set teeth include one right set tooth and one left set tooth.

24. The method of Claim 23, wherein the right set tooth or left set tooth includes an intermediate portion extending in a slanting manner to form an acute angle between a central axis of the intermediate portion and a central axis of the blade, and a distal tip portion extending from the intermediate portion in a slanting manner toward the central axis of the blade, the distal tip portion forming an acute angle between the central axis of the intermediate portion and a central axis of the distal tip portion.

25. The method of Claim 22, further including
imparting a biasing force against the blade in a direction orthogonal to the cutting edge.

26. The method of Claim 25, wherein imparting a biasing force includes
imparting a biasing force against the blade proximal to the work table by a first tensioning assembly.

27. The method of Claim 26, wherein the bandsaw includes a second tensioning device for imparting a biasing force against the blade.

28. The method of Claim 22, further comprising
removing an old bandsaw blade prior to installing the bandsaw blade.